DOCKET NO. 2001241US0

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
MATTHIAS KRONER, ET AL.	: EXAMINER: RAJGURU, U.
SERIAL NO: 10/044,948	:
FILED: JANUARY 15, 2002	: GROUP ART UNIT: 1711
FOR: COMPOSITIONS FOR PRODUCING MOLDINGS FROM FINELY DIVIDED MATERIALS	:

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

This is an appeal of the Final Rejection dated February 28, 2003 of Claims 1-12. A Notice of Appeal was timely filed on May 28, 2003.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is BASF Aktiengesellschaft having an address at 67056 Ludwigshafen, Fed. Rep Germany.

II. RELATED APPEALS AND INTERFERENCES

Appellants, Appellants' legal representative and the assignee are aware of no appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

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III. STATUS OF THE CLAIMS

Claims 1-12, all the claims in the application, stand rejected and are herein appealed.

IV. STATUS OF THE AMENDMENTS

No amendment under 37 CFR 1.116 has been filed.

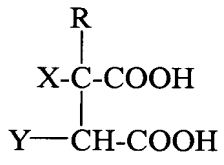
V. SUMMARY OF THE INVENTION

As recited in Claim 1, the invention is a method for producing (1) moldings from finely divided materials, wherein the finely divided material is mixed or impregnated with a heat-curable composition and the resultant mixture is shaped at temperatures above 120°C or (2) consolidated sheetlike structures of fiber materials, wherein an unconsolidated sheetlike structure of fiber materials is first treated with a heat-curable composition and then heated at temperatures above 120°C, wherein the heat curable composition comprises:

(A) at least one reaction product of

i. at least one polycarboxylic acid of the formula I:

in which



(I)

R is a hydrogen or a CH_2COOH group,

X is hydrogen, OH or NH_2, but is OH or NH_2 if Y is hydrogen,

Y is hydrogen, OH or NH_2 but is OH or NH_2 is X is hydrogen, or

X and Y together are a π bond,

and/or an anhydride of the polycarboxylic acid I

ii. with ammonia and, if desired,

iii. with primary amines and/or compounds containing at least two hydroxyl groups; and/or

(B) a mixture of at least one polycarboxylic acid of the formula I and/or its anhydride and at least one substance which releases ammonia on heating and, if desired, primary amines and/or compounds containing at least two hydroxyl groups.

See the specification at the paragraph bridging pages 2 and 3.

VI. ISSUES

(A) Whether Claims 1-12 are unpatentable under 35 U.S.C. § 103(a) over CA 2,037,214 (Dotzauer et al)?

(B) Whether Claims 1, 4 and 12 are unpatentable under 35 U.S.C. §112, second paragraph?

(C) Whether Claims 1 and 12 are unpatentable under 35 U.S.C. §112, first paragraph?

VII. GROUPING OF THE CLAIMS

For each issue, the claims stand or fall together.

VIII. ARGUMENT

Issue (A)

Claims 1-12 stand rejected under 35 U.S.C. §103(a) as unpatentable over Dotzauer et al. That rejection is untenable and should not be sustained.

The present invention relates to the use of compositions which comprise reaction products of low molecular mass dicarboxylic or tricarboxylic acids with ammonia to produce moldings from finely divided materials.

Specifically, as recited in Claim 1, the invention is a method for producing (1) moldings from finely divided materials, wherein the finely divided material is mixed or impregnated with a heat-curable composition and the resultant mixture is shaped at temperatures above 120°C or (2) consolidated sheetlike structures of fiber materials, wherein an unconsolidated sheetlike structure of fiber materials is first treated with a heat-curable composition and then heated at temperatures above 120°C, wherein the heat curable composition comprises:

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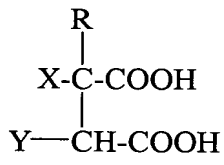

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X is hydrogen, OH or NH_2, but is OH or NH_2 if Y is hydrogen,

Y is hydrogen, OH or NH_2 but is OH or NH_2 is X is hydrogen, or

X and Y together are a π bond,

and/or an anhydride of the polycarboxylic acid I

ii. with ammonia and, if desired,

iii. with primary amines and/or compounds containing at least two hydroxyl groups; and/or

(B) a mixture of at least one polycarboxylic acid of the formula I and/or its anhydride and at least one substance which releases ammonia on heating and, if desired, primary amines and/or compounds containing at least two hydroxyl groups.

As described in the specification beginning at page 1, line 9, prior art moldings from finely divided materials have suffered from various deficiencies. Among such prior art is EP-

A445578, which is equivalent to Dotzauer et al and which, as described in the specification at page 1, lines 31-35, discloses boards made from finely divided materials such as glass fibers, whose binder comprises a composition comprising high molecular mass polycarboxylic acids and polyhydric alcohols, alkanolamines and/or polyfunctional amines. The water resistance of the boards obtained is not satisfactory.

As described above, Dotzauer et al employs a binder which comprises high molecular mass polycarboxylic acids. Indeed, Dotzauer et al disclose that their invention includes condensates of high molecular weight polycarboxylic acids (page 1, lines 29-30). Dotzauer et al disclose further that particularly suitable high molecular weight polycarboxylic acids are polymeric polycarboxylic acids that contain, as polymerized units, not less than 50 mol% of monomers which contain a carboxyl group, such as maleic acid and fumaric acid, and 50-95 mol% of one or more monomers such as styrene, ethylene, and acrylates or methacrylates of alkynols of 1 to 6 carbon atoms. (Page 2, lines 1-20).

The present invention differs from, and is not suggested by Dotzauer et al, on at least two levels. The at least one polycarboxylic acid of Formula I herein is different from, and of a substantially lower molecular weight than, the high molecular weight polycarboxylic acids of Dotzauer et al. It is clear that the presently-recited polycarboxylic acid of Formula I is **not** polymeric. In addition, the present invention requires ammonia or at least one substance which releases ammonia. Dotzauer et al neither disclose nor suggest the presence of such a material.

In the Final Office Action, the Examiner finds that Appellants' arguments that the boards of Dotzauer et al have unsatisfactory water resistance "is not commensurate in scope of above claims because this limitation is not encompassed by these claims." In reply, the Examiner's point is incongruous. Appellants' argument refers to a defect in the prior art, not a property of the presently-claimed invention.

Regarding Appellants' argument that Appellants' polycarboxylic acid component is different from, and has a substantially lower molecular weight than, the high molecular weight polycarboxylic acids of Dotzauer et al, the Examiner finds the argument not persuasive because the claims do not recite a specific range of molecular weight, and the Examiner does not understand why the term "polycarboxylic acid" is used when it is not polymeric in structure.

In reply, the molecular weight is governed by the definition of the groups in Formula I for the polycarboxylic acid. Furthermore, the prefix "poly" simply stands for "more than one." Formula I indicates that Appellants' polycarboxylic acid can have two or three carboxylic groups. But the presence of more than one group does not make a compound containing it a polymer!

For all the above reasons, it is respectfully requested that the rejections over Dotzauer et al be REVERSED.

Issue (B)

Claims 1, 4 and 12 stand rejected under 35 U.S.C. §112, second paragraph. That rejection is untenable and should not be sustained. Regarding the term "finely divided", it is respectfully submitted that one skilled in this art, which involves producing moldings from finely divided materials, would understand the metes and bounds of the above-quoted term. Guidance is also provided in the specification at page 15, line 19ff and page 20, line 13ff.

In the Final Office Action, the Examiner finds that the above reference to the specification is of a description of polymeric matrices, and not for particular materials. This is clearly incorrect, as the disclosure at page 20, line 13ff makes clear, since it described fibrous and particulate substrate materials having particular dimensions and exemplifies both natural and synthetic, organic and inorganic materials.

Accordingly, it is respectfully requested that this rejection be REVERSED.

Issue (C)

Claims 1 and 12 stand rejected under 35 U.S.C. §112, first paragraph, as failing to satisfy the description requirement thereof. That rejection is untenable and should not be sustained.

Claims 1 and 12 were amended by the amendment filed November 4, 2002, with underling indicating insertions, as follows:

"X is hydrogen, OH or NH_2, but is OH or NH_2 if Y is hydrogen,

Y is hydrogen, OH or NH_2, but is OH or NH_2 is X is hydrogen."

Thus, Appellants made explicit what was at least implicit, that X and Y can each be hydrogen, but must be OH or NH_2 when the other is hydrogen.

In the Final Office Action, the Examiner finds that there is no support in the specification for "X is a hydrogen" and "Y is a hydrogen." The Examiner is incorrect. Appellants described what X can be "if Y is hydrogen," and what Y can be "if X is hydrogen." How can that not be a description that X can be hydrogen, and that Y can be hydrogen?

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

IX. CONCLUSION

For the above reasons, it is respectfully requested that all the rejections still pending in the Final Office Action be REVERSED.

Respectfully submitted,

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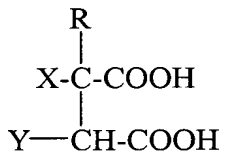
APPENDIX

CLAIMS ON APPEAL

1. A method for producing (1) moldings from finely divided materials, wherein the finely divided material is mixed or impregnated with a heat-curable composition and the resultant mixture is shaped at temperatures above 120°C or (2) consolidated sheetlike structures of fiber materials, wherein an unconsolidated sheetlike structure of fiber materials is first treated with a heat-curable composition and then heated at temperatures above 120°C, wherein the heat curable composition comprises:

(A) at least one reaction product of

i. at least one polycarboxylic acid of the formula I:



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in which

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Y is hydrogen, OH or NH_2 but is OH or NH_2 is X is hydrogen, or

X and Y together are a π bond,

and/or an anhydride of the polycarboxylic acid I

ii. with ammonia and, if desired,

iii. with primary amines and/or compounds containing at least two hydroxyl groups; and/or

(B) a mixture of at least one polycarboxylic acid of the formula I and/or its anhydride and at least one substance which releases ammonia on heating and, if desired, primary amines and/or compounds containing at least two hydroxyl groups.

2. The method as claimed in claim 1, wherein the reaction product of the components i and ii is selected from the monoamides and diamides, the monoammonium and diammonium salts, and the monoamide ammonium salts of maleic acid and of fumaric acid.

3. The method as claimed in claim 1, wherein the reaction product is a water-soluble oligomer obtained by heating a monoamide or diamide, a monoammonium or diammonium salt or a monoamide ammonium salt of a polycarboxylic acid of the formula I.

4. The method as claimed in claim 1, wherein the heat-curable composition further comprises a finely divided polymer of ethylenically unsaturated monomers.

5. The method as claimed in claim 1, wherein the heat-curable composition further comprises at least one compound containing at least two hydroxyl groups.

6. The method as claimed in claim 1, wherein the binder is used in an amount of from 2% by weight to 100% by weight, based on 100% by weight of finely divided material.

7. The method as claimed in claim 1, wherein the heat-curable composition is used as a powder.

8. The method as claimed in claim 1, wherein the finely divided material is used in the form of fibers, chips, slivers or particulate materials.

9. The method as claimed in claim 1, wherein the composition is used in the form of an aqueous solution or dispersion.

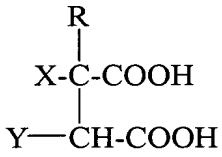
10. A molding obtainable by a process as claimed in claim 1.

11. A sheetlike structure obtainable by a method as claimed in claim 1.

12. A heat-curable composition comprising

(A) at least one reaction product of

i. at least one polycarboxylic acid of the formula I:



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and/or an anhydride of the polycarboxylic acid I

ii. with ammonia and, if desired,

iii. with primary amines and/or compounds containing at least two hydroxyl groups; and/or

(B) a mixture of at least one polycarboxylic acid of the formula I and/or its anhydride and at least one substance which releases ammonia on heating and, if desired, primary amines and/or compounds containing at least two hydroxyl groups; and

(C) at least one further constituent selected from finely divided polymers of ethylenically unsaturated monomers, compounds containing at least two hydroxyl groups, and polymeric polycarboxylic acids.